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State of New Jersey  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
DIVISION OF SOLID WASTE MANAGEMENT  
CN 028, Trenton, N.J. 08625  
609 - 292 - 8879

MICHAEL F. DeBONIS  
ACTING DIRECTOR

AUG 25 1986

Mr. Arthur A. Borin  
Abex Corporation  
65 Valley Road  
Mahwah, New Jersey 07430

Dear Mr. Borin:

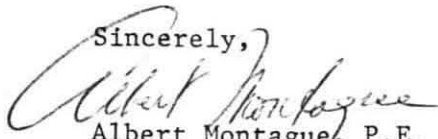
RE: Abex Landfill, Facility No. 0233C, Bergen County

Enclosed, please find a Closure and Post-Closure Plan Approval for the Abex Sanitary Landfill that is transmitted to you as the registrant for the facility.

This Approval is subject to compliance with all the conditions specified herein. The Department will consider amendment or modification of the specific terms of the conditions of this Approval if a written request is submitted by certified mail within fifteen (15) calendar days of the date of this letter. Said written request must clearly state the proposed amendment or modification and the basis for the request.

This Approval is non-transferrable.

Sincerely,



Albert Montague, P.E.  
Chief Engineer  
Engineering

EP45:jj

Enclosure



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**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
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**CLOSURE AND POST-CLOSURE PLAN APPROVAL**

Under the provisions of N.J.S.A. 13:1E-1 et seq., the Solid Waste Management Act, Closure and Post-Closure Plan Approval is hereby issued for:

FACILITY NAME: Abex Landfill  
FACILITY REGISTRATION NUMBER: 0233C  
LOT NO. (S): 1 and 2  
BLOCK NO. (S): 44  
MUNICIPALITY: Mahwah  
COUNTY: Bergen  
POST-CLOSURE PERIOD: 30 Years  
FINANCIAL PLAN UPDATE: 2 Years

This Closure and Post-Closure Plan consists of both a Closure and Post-Closure Care Plan and a Closure and Post-Closure Financial Plan. Approval is issued to insure that all environmental safeguards are adequate and to guarantee that sufficient funds are reserved to implement the environmental safeguards after the time the facility ceases to accept waste.

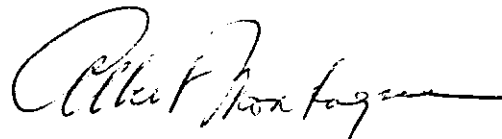
This Approval is subject to compliance with all the conditions specified herein and all regulations promulgated by the Department of Environmental Protection. The Department may require additional closure and post-closure care measures or waive any of the conditions specified herein, should specific health and/or environmental circumstances justify such action. The Department reserves the right to require the amendment of the Closure and Post-Closure Plan should changes in the facility's Certificate of Approved Registration and Engineering Design Approval or Department regulations become effective.

This Approval shall not prejudice any claim the State may have to Riparian land, nor does it allow the registrant to fill or alter, or allow to be filled or altered, in any way, lands that are deemed to be Riparian, Wetlands, Stream Encroachment or Flood Plains, or within the Coastal Area Facility Review Act (CAFRA) zone and the New Jersey Pinelands Protection Act of 1979 or allow the discharge of pollutants to waters of this State without first acquiring the necessary grants, permits or approvals from the Department of Environmental Protection. In addition, this approval does not relieve the applicant of the responsibility to obtain any and all other permits and approvals as necessary.

Failure to comply with all the conditions specified herein may result in revocation of this approval and/or may result in other regulatory or legal actions which the Department is authorized to institute by law.

This approval is non-transferable.

Aug 21 1986  
Date

  
Albert Montague, P.E.  
Chief Engineer  
Engineering

## CLOSURE AND POST-CLOSURE PLAN APPROVAL

### A. GENERAL REQUIREMENTS

This approval covers those activities and costs associated with the design, purchase, construction and maintenance of all environmental safeguards implemented after this facility ceased accepting waste, as set forth in the Closure and Post-Closure Plan and all approved amendments or modifications to this Plan. Specifically, the documents upon which this Approval is based include:

- "Abex Landfill Closure and Post-Closure Care Plan", dated July 1984, by BCM Eastern, Inc. This shall hereinafter be referred to as "Closure Plan".
- Response document, dated January 8, 1986, submitted by BCM Eastern Inc. in response to a letter of August 15, 1985 by the Department of Environmental Protection (hereinafter DEP or the Department).
- Response document dated June 13, 1986, regarding disposal of lagoon waste onto landfill prior to closure.
- Additional modifications required by the Department as stated in this Approval.

The Closure Plan submitted for approval is required under an Administrative Consent Order signed by Arthur A. Borin of Abex Corporation on June 18, 1984 and by Joseph A. Rogalski of DEP on July 5, 1984.

### B. CARE PLAN REQUIREMENTS

#### 1. Final Cover

Final cover at this site shall consist of the following (from top to bottom):

- a. Vegetation - The site shall be vegetated in accordance with the requirements of the Bergen Soil Conservation District.
- b. Vegetation-bearing Soil - Twelve inches of soil suitable to support vegetation shall be applied.
- c. Drainage layer - Six inches of clean sand shall be applied to serve as a drainage layer.

- d. Impermeable Barrier - A one-foot compacted clay layer having a maximum permeability of  $1.0 \times 10^{-7}$  cm/s shall be applied. On slopes less than seven percent, the clay layer may be replaced by an impermeable synthetic membrane having a minimum thickness of 20 mils.
- e. Protective layer - The impermeable layer shall be underlain by a protective six-inch layer of clean soil.

2. Grading

The top slope of the landfill shall be graded such that ponding does not occur. Side slopes shall be no steeper than three horizontal to one vertical.

3. Surface Preparation

Prior to placement of final cover, all scrap metal shall be removed from the site as well as any other objects that may protrude through the impermeable layer.

4. Leachate Collection

We have reviewed the annual monitoring data from samples taken in October 1985 in accordance with the NJPDES Permit. Based on these results, a waiver of the requirement to install a leachate collection system is hereby granted. Please be advised that a leachate collection system may be required in the future if subsequent ground water monitoring indicates such a need.

5. Soil Erosion and Sediment Control Plan

We are in receipt of a letter from the Bergen County Soil Conservation District, dated September 10, 1984, which certifies that the Soil Erosion and Sediment Control Plan (SESCP) for this facility is in accordance with the Soil Erosion and Sediment Control Act.

The SESCO is included in Appendix C of the Closure Plan. The applicant shall adhere to the SESCO, as well as other specifications in this Approval.

6. Ground Water Monitoring

The applicant shall comply with all of the requirements of their NJPDES Permit. This Permit, No. 0000108, was issued in July 1985 and requires sampling at eight wells and two surface water locations.

7. Methane Ventilation

The Response Document prepared by BCM Eastern Inc. contains the results of a methane sampling program conducted on October 1, 1985, which show that the maximum methane concentration at this site was 4.0 ppm. Based on this report, the methane ventilation requirement is hereby waived. Annual testing shall be conducted between June 1 and September 1 each year throughout the closure period and for a minimum of three years during the post-closure period. Tests shall be taken along the perimeter of the landfill at 200-foot intervals. The results of the methane sampling program shall be submitted by October 1 each year. A methane control system may be required if future levels of methane indicate this need.

8. Facility Access Control

Sufficient measures shall be taken to prevent access by unauthorized persons to this facility. Section 3.2.8 of the Closure Plan states that the Abex property is enclosed by an eight-foot cyclone fence with guarded gates. Such a system fulfills the closure requirements, provided it is adequately maintained.

9. Stream Encroachment Permit

This Approval is contingent upon the obtaining of and compliance with a Stream Encroachment Permit from the Bureau of Flood Plain Management, Division of Water Resources.

10. Post-Closure

Adequate steps shall be taken to maintain the monitoring wells and the final cover and grading at this facility during the 30-year post-closure period. Should other control systems be required in the future, these shall be properly operated and maintained as specified by this Department.

11. Property Description

As stated in N.J.A.C. 7:26-2.9(c), a detailed description of the landfill shall be recorded, along with the deed, with locations and depths of wastes on the site, the depth and type of cover material, the dates the landfill was in use, and all other information as may be of interest to potential landowners, and shall remain in the record in perpetuity. A copy of this description shall be submitted to this office, accompanied by a letter from the County recording office stating that this description has been entered into their records.

12. Additional Copy

An additional copy of the January 1986 Response Document, signed and sealed by a New Jersey licensed Professional Engineer, shall be submitted to this office.

13. As-Built Certification

Within 90 days after the completion of closure of the landfill in accordance with the Approved Closure Plan, Abex shall certify to the Department that the landfill has been closed in accordance with the specifications of the Approved Closure Plan. At the same time, Abex shall submit to the Department an "as-built" certification by a New Jersey licensed Professional Engineer that each provision of the Closure Plan has been implemented as designed and approved and that the landfill has been closed in accordance with the specifications of the approved Closure Plan.

14. Conformance with Closure Plan

Abex shall implement the Closure and Post-Closure of this facility within the approved timeframe and in accordance with the Closure Plan and any requirements herein. Abex shall maintain a copy of the Closure Plan and required Response Document at its Mahwah facility during the closure period. Within ten days of the date of this Approval, Abex shall file a copy of the Closure Plan and required revisions with the Township of Mahwah's municipal clerk.

15. Sale of Property

Abex shall not sell the land which was utilized as the landfill unless the contract of sale for the land describes such use and period of time that the landfill was so utilized.

16. Right of Entry

The applicant hereby agrees, consents and authorizes representatives of this Department to make any inspections, searches and examinations of all premises occupied by it which may be impacted by the activities authorized by this Approval whenever these representatives, in their discretion, consider such an inspection, search and/or examination necessary to determine the extent of compliance with any and all conditions of the Approval.

17. Proper Certification

All engineering reports, maps and drawings associated with the closure and post-closure of this facility shall be signed and sealed by a New Jersey licensed Professional Engineer.

C. FINANCIAL PLAN REQUIREMENTS

1. Financial Guarantee

The financial portion of the Closure Plan contains a trust agreement and letters of credit as a means of ensuring that closure and post-closure costs are provided for. This form of financial assurance is allowed in the Administrative Consent Order. The Department conceptually approves of these documents. However, they must be modified as stated herein. These guarantees shall be held in trust for the Department in the event that the owner/operator fails to comply with the requirements for proper closure and post closure.

2. Financial Schedule

To insure that engineering activities are in accordance with the approved closure plan for specific closure and post-closure activities, the Department has established a financial monitoring system. The format and description of this system is contained in Appendix A. Within sixty calendar days of the date of this Approval, the owner/operator shall submit to the Department a completed financial schedule which details the engineering estimate of all costs associated with the requirements for proper closure and post-closure maintenance. All requests for withdrawal of money from the Trust Fund dedicated to closure and post-closure care activities are to be submitted on form SFA-004 to:

NJ Department of Environmental Protection  
Office of Special Funds Administration  
428 East State Street CN402  
Trenton, New Jersey 08625

3. Estimated Closure Costs

Table 4-1 of the Closure Plan shall be modified as described below:

- a. As outlined in paragraph 1 of the Care Plan Requirements section of this Approval, the final cover shall be substantially different from that proposed in the Closure Plan. Therefore Table 4-1 shall be changed to indicate the quantities and total costs for each component of the required cover. These include the twelve-inch top-soil layer, the six-inch drainage layer, the one-foot clay layer, the impermeable synthetic membrane (if applicable), and the six-inch protective soil layer beneath the impermeable layer.
- b. The narrative portion of the Closure Plan discusses a number of measures which are not mentioned in Table 4-1. This Table shall be modified to specify quantities and total costs for each of the following items:



- Installation of silt fence
- Installation of the straw bale barriers
- Temporary erosion control measures. Page 3 of Appendix C of the Closure Plan discusses such measures for earth slopes undergoing cut-and-fill operations. Various alternative measures are discussed including temporary seeding (if permanent seeding can not be done immediately), mulch, jute matting and synthetic netting. Quantities and total costs shall be specified for each of these alternatives, and the most expensive alternatives shall be accounted for in the total estimated cost.
- Masonicus Brook culvert/flood plain modifications. Appendix E discusses a plan to reduce the elevation of the 100-year flood in Masonicus Brook within the Abex Property. This Project is not included in Table 4-1. If this work is to be funded separately from the landfill closure and post-closure this shall be so stated. Otherwise quantities and total costs for the various components of this project shall be indicated in Table 4-1.
- Stabilized construction entrance.

#### 4. Estimated Post-Closure Costs

Table 4.2 entitled "Landfill Estimated Costs Post-Closure", was revised in the January 1986 Response Document. The revised Table 4-2 includes the cost of ground water monitoring required under the NJPDES Permit, as well as site maintenance. Site maintenance is described as including "erosion control, as needed".

Table 4.2 shall be modified such that well maintenance and erosion control measures are itemized, the anticipated frequency of each measure is stated, and the cost of each measure is specified.

The estimated inflation factor in this Table is 6 percent. This shall be changed to 6.7 percent, as required by the Office of Special Funds Administration of DEP. The inflation factor shall be revised every two years with the plan update as required by N.J.A.C. 7:26-2.9(f)5.

#### 5. Cost Estimates

Tables 4-1 and 4-2 shall be revised as required in sections 9 and 10 of the Care Plan Requirements portion of this Approval. If approved by the Department, the estimated total cost for closure and post-closure shall be the amounts indicated on the letters of credit for closure and post-closure.

6. Trust Agreement and Letters of Credit

The Closure Plan contains a trust agreement, letter of credit for closure and letter of credit for post-closure. Once the Department approves of the revised cost-estimates, the Applicant shall have 30 days to submit signed and completed copies of the trust agreement, letter of credit for closure and letter of credit for post-closure.

The letters of credit shall be for the approved amounts, shall be effective as of the date of signing, and shall have expiration dates which are appropriate for the activities which they finance.

Submission Requirements - Summary

The additional documents required under this Approval, and the dates they are due, are summarized below:

Document	Due Date
1. Revised Table 4-1 (Estimated Closure Costs)	30 days after date of this Approval
2. Revised Table 4-2 (Estimated Closure Costs)	30 days after date of this Approval
3. Additional copy of January 1986 Response Document	30 days after date of this Approval
4. Completed Trust Agreement and Letters of Credit	30 days following Departmental approval of documents 1 and 2
5. Property description to accompany deed	30 days after completion of closure
6. Stream Encroachment Permit	When received
7. Certification by Abex of proper closure	90 days after completion closure
8. As-built certification by NJ licensed Professional Engineer	90 days after completion a closure
9. Annual methane monitoring results	October 1 of each year
10. Financial Schedule	60 days after date of this Approval